REMARKS

The foregoing amendments are made to improve the form of the patent application. No new matter has been added and entry is respectfully requested.

A favorable Action on the merits is solicited.

Respectfully submitted,

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PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

KAZUYUKI KIKUCHI

Application No.:	Unassigned	Art Unit:	Unassigned
Filed:	February 6, 2001	Examiner:	Unassigned
For:	SEMICONDUCTOR INTEGRATED DEVICE		

SPECIFICATION, CLAIMS AND ABSTRACT AS PRELIMINARILY AMENDED

Amendments to the paragraph beginning at page 1, line 10:

Semiconductor integrated devices which have ~~high~~ many functions and are small-sized have been developed in recent years. For instance, in a television receiver, a one-chip TV signal processing IC in which a TV signal processing IC is integrated with peripheral parts is being commonly used, making ~~a~~ progress in saving ~~of the~~ space ~~of~~ on the chassis.

Amendments to the paragraph beginning at page 1, line 16:

Fig. 7 is a view showing a connection between a conventional TV signal processing IC and a microcomputer. A signal processing IC 71 is a semiconductor device having the ability to process TV signals. An MCU 72 is a semiconductor device which functions as a microcomputer ~~working~~ for the control and tuning of the signal processing IC 71.

Amendments to the paragraph beginning at page 2, line 15:

The signal processing IC 71 and the MCU 72 are mounted on a substrate and each terminal of the signal processing IC 71 and the MCU 72 is connected by ~~a~~ wiring printed on the substrate.

Amendments to the paragraph beginning at page 2, line 22:

However, in the conventional television receiver, terminals which connect the signal processing IC with the MCU are ~~arranged scattering~~ scattered on each side, bringing about complicated connections and making the wiring region of a ~~print~~ printed substrate large, giving rise to the problem of a larger packaging area of the substrate.

Amendments to the paragraph beginning at page 3, line 3:

Also, the signal processing IC requires the crystal ~~vibrator~~ oscillator for ~~the~~ processing ~~of~~ color signals and the MCU requires the ~~vibrator~~ oscillator for a system clock, posing the problem that parts having similar functions are ~~each~~ required and the number of parts is increased.

Amendments to the paragraph beginning at page 3, line 8:

Besides ~~the~~ television receivers, in all semiconductor integrated devices ~~mounted with~~ including a plurality of semiconductor devices, each semiconductor device is provided with connecting terminals without considering positional ~~relationship~~ relationships with other semiconductor devices. Accordingly, there is a problem that the wiring region of a substrate is increased and therefore the packaging area of the substrate is increased. Further, a separate ~~vibrator~~ oscillator is provided for each semiconductor device. Accordingly, the number of parts and, therefore, the packaging area increases.

Amendments to the paragraph beginning at page 3, line 21:

It is an object of the present invention to provide an inexpensive semiconductor integrated device in which it is possible to ~~reduced~~ reduce the wiring region on the substrate and also reduce the number of parts and thereby decrease the packaging area.

Amendments to the paragraph beginning at page 5, line 2:

Fig. 2 is a view showing the function of each of a crystal ~~vibrator 3~~oscillator, a signal processing IC~~1~~, and an MCU~~2~~ shown in Fig. 1.

Amendments to the paragraph beginning at page 5, line 5:

Fig. 3 is a view showing a structure when the number of terminals connected from a signal processing IC~~1~~ to an MCU~~2~~ exceeds the number of the terminals which can be disposed on one side.

Amendments to the existing claims:

1. (Amended) A semiconductor integrated device comprising:

a first semiconductor device having a plurality of terminals; and

a second semiconductor device having a plurality of terminals, wherein ~~a few or all~~ at least some of the terminals of said first semiconductor device ~~being~~ are connected with ~~the~~ corresponding terminals of said second semiconductor device; and

a substrate on which ~~holds~~ said first and second semiconductor devices are mounted, wherein one group of terminals selected from the groups of terminals consisting of (i) the terminals of said first semiconductor device that are connected to ~~the~~ corresponding terminals of said second semiconductor device, ~~or~~ (ii) the terminals of said second semiconductor device that are connected to ~~the~~ corresponding terminals of said second semiconductor device, ~~or~~ and (iii) the terminals of said first and second

semiconductor devices that are connected to each other, are ~~placed together~~commonly located.

2. (Amended) The semiconductor integrated device according to claim 1, wherein terminals of said first and second semiconductor device that are connected to each other are arranged opposite~~to~~ each other on said substrate.

3. (Amended) The semiconductor integrated device according to claim 1, wherein the groups of terminals selected from (i) the terminals of said first semiconductor device that are connected to the corresponding terminals of said second semiconductor device,~~or~~ (ii) the terminals of said second semiconductor device that are connected to the corresponding terminals of said second semiconductor device,~~or~~ and (iii) the terminals of said first and second semiconductor devices that are connected to each other, are~~arranged~~ located on one side of an edge part of said first and second semiconductor devices where the plurality of connecting terminals of said first semiconductor device or said second semiconductor device are ~~arranged~~located.

4. (Amended) The semiconductor integrated device according to claim 1, wherein the groups of terminals selected from (i) the terminals of said first semiconductor device that are connected to the corresponding terminals of said second semiconductor device,~~or~~ (ii) the terminals of said second semiconductor device that are connected to the corresponding terminals of said second semiconductor device,~~or~~ and (iii) the terminals of said first and second semiconductor devices that are connected to each other, are arranged in series on~~one~~ a first side of an edge section of said first and second semiconductor devices where the plurality of connecting terminals of said first semiconductor device or said second semiconductor device are ~~arranged~~located and on a second side adjacent to the~~one~~ first side.

5. (Amended) The semiconductor integrated device according to claim 1, wherein the connecting terminals ~~constituting said prescribed connecting terminal group~~ of the group of terminals selected are arranged in series such that ~~these~~ the connecting terminals are related ~~by the prescribed~~, in order, to each other.

6. (Amended) The semiconductor integrated device according to claim 1, wherein the respective pluralities of connecting terminals of said first semiconductor device and said second semiconductor device are arranged on ~~the~~ a long side ~~part~~ in ~~the~~ a longitudinal direction of said first and second semiconductor devices, the respective short ~~side parts~~ sides of said first semiconductor device and said second semiconductor device are arranged opposite to each other, and ~~said respective prescribed~~ the connecting terminals of the selected group of connecting terminals are arranged in series such that ~~these~~ the groups are related with each other ~~by the prescribed~~, in order, from the short side ~~part~~ in the long side ~~part~~, close to ~~said~~ the short side ~~part~~.

7. (Amended) The semi conductor integrated device according to claim 1, wherein said first semiconductor device comprises:

a power source input terminal which receives ~~the~~ supply of a power source voltage from said second semiconductor device;

an oscillating unit connected to said power source input terminal and generating a signal with a frequency;

a multiplying unit which changes the frequency of ~~a~~ the signal which said oscillating unit ~~oscillates~~generates; and

an output terminal which outputs the signal ~~whose frequency is changed by said multiplying unit~~; and

said second semiconductor device comprises:

a power source output terminal which supplies a power source voltage to said first semiconductor device; and

a signal input terminal which receives the signal from said output terminal.

8. (Amended) A semiconductor integrated device according to claim 7, wherein said first semiconductor device further comprises:

a power source voltage supplying unit which supplies power ~~source~~ to said oscillating unit; and

a power source switching unit which supplies ~~the~~ power ~~source supplied~~ from the power source voltage supplying unit to said oscillating unit and said multiplying unit when said power source voltage supplying unit supplies power ~~source~~ and which supplies ~~the~~ power ~~source~~ supplied from said power source input terminal to said oscillating unit and said multiplying unit when said power source voltage supplying unit does not supply power ~~source~~.

9. (Amended) A semiconductor integrated device comprising:

a first semiconductor device having a plurality of terminals; and

a second semiconductor device having a plurality of terminals, wherein ~~a few or all~~ at least some of the terminals of said first semiconductor device ~~being~~ are connected with ~~the~~ corresponding terminals of said second semiconductor device; and

a substrate, having ~~two~~ first and second sides, ~~and holds~~ said first semiconductor device being mounted on ~~one~~ the first side and said second semiconductor device being mounted on the ~~other~~ second side, wherein one group of terminals selected from the groups of terminals consisting of (i) the terminals of said first semiconductor device that are connected to ~~the~~ corresponding terminals of said second semiconductor device, ~~or~~ (ii) the terminals of said second semiconductor device that are connected to the corresponding terminals of said second semiconductor device, ~~or~~ and (iii) the terminals of said first and second semiconductor devices that are connected to each other, are ~~placed~~ located opposite ~~to~~ each other, on the ~~two~~ first and second sides of the substrate, ~~with a through-hole~~ and connected via respective through-holes in said substrate corresponding to ~~each terminal in~~ and extending between the terminals.

10. (Amended) The semiconductor integrated device according to claim 9, wherein the groups of terminals selected from (i) the terminals of said first semiconductor device that are connected to the corresponding terminals of said second

semiconductor device,~~-or~~ (ii) the terminals of said second semiconductor device that are connected to the corresponding terminals of said second semiconductor device,~~-or~~ and (iii) the terminals of said first and second semiconductor devices that are connected to each other, are~~-arranged~~ located on one side of an edge part of said first and second semiconductor devices where the plurality of connecting terminals of said first semiconductor device or said second semiconductor device are ~~arranged~~located.

11. (Amended) The semiconductor integrated device according to claim 9, wherein the groups of terminals selected from (i) the terminals of said first semiconductor device that are connected to the corresponding terminals of said second semiconductor device,~~-or~~ (ii) the terminals of said second semiconductor device that are connected to the corresponding terminals of said second semiconductor device,~~-or~~ and (iii) the terminals of said first and second semiconductor devices that are connected to each other, are arranged in series on~~-one~~ a first side of an edge section of said first and second semiconductor devices where the plurality of connecting terminals of said first semiconductor device or said second semiconductor device are ~~arranged-~~located and on a second side adjacent to the~~-one~~ first side.

12. (Amended) The semiconductor integrated device according to claim 9, wherein the connecting terminals~~-constituting-said-prescribed-connecting-terminal group~~ of the group of terminals selected are arranged in series such that~~-these~~ the connecting terminals are related~~-by-the-prescribed~~, in order, to each other.

13. (Amended) The semiconductor integrated device according to claim 9, wherein the respective pluralities of connecting terminals of said first semiconductor device and said second semiconductor device are arranged on~~-the~~ a long side~~-part~~ in ~~the-~~a longitudinal direction of said first and second semiconductor devices, the respective short~~-side-parts~~ sides of said first semiconductor device and said second semiconductor device are arranged opposite to each other, and~~-said-respective prescribed~~ the connecting terminals of the selected group of connecting terminals are arranged in series such that ~~these-~~the groups are related with each other~~-by-the~~

~~prescribed~~, in order, from the short side ~~part~~ in the long side ~~part~~, close to ~~said~~ the short side ~~part~~.

14. (Amended) The semi conductor integrated device according to claim 9, wherein said first semiconductor device comprises:

a power source input terminal which receives ~~the~~ supply of a power source voltage from said second semiconductor device;

an oscillating unit connected to said power source input terminal and generating a signal with a frequency;

a multiplying unit which changes the frequency of ~~a~~ the signal which said oscillating unit ~~oscillates~~generates; and

an output terminal which outputs the signal ~~whose frequency is changed by said multiplying unit~~; and

said second semiconductor device comprises:

a power source output terminal which supplies a power source voltage to said first semiconductor device; and

a signal input terminal which receives the signal from said output terminal.

15. (Amended) A semiconductor integrated device according to claim 14, wherein said first semiconductor device further comprises:

a power source voltage supplying unit which supplies power ~~source~~ to said oscillating unit; and

a power source switching unit which supplies ~~the~~ power ~~source supplied~~ from the power source voltage supplying unit to said oscillating unit and said multiplying unit when said power source voltage supplying unit supplies power ~~source~~ and which supplies the power ~~source~~ supplied from said power source input terminal to said oscillating unit and said multiplying unit when said power source voltage supplying unit does not supply power ~~source~~.

Amendments to the abstract:

ABSTRACT OF THE DISCLOSURE

A semiconductor integrated device has one signal processing IC and one ~~MCU~~microcomputer unit (MCU). A few terminals of the IC are connected to the corresponding terminals of the MCU. The terminals of the IC that are connected to the corresponding terminals of the MCU are disposed near each other. Similarly. the terminals of the MCU that are connected to the corresponding terminals of the IC are disposed near each other. Moreover, the IC and the MCU are mounted, on a substrate,~~ in such a manner~~ so that th~~e above-mentioned~~ connected terminals of the IC and MCU face each other.